SUPPLEMENT

TO

ENVIRONMENTAL ASSESSMENT

FOR

GYPSY MOTH ERADICATION

IN

UTAH

DECISION NOTICE

AND

FINDING OF NO SIGNIFICANT IMPACT

United States
Department of
Agriculture

FOREST
SERVICE

State
of
Utah

AGRICULTURE
DEPARTMENT

le992

SUPPLEMENTAL FIVE-YEAR ENVIRONMENTAL ASSESSMENT
(1992-1996)

to

1990 ENVIRONMENTAL ASSESSMENT

for

GYPSY MOTH ERADICATION

RESPONSIBLE AGENCIES AND OFFICIALS:

Lead Agency

Gray Reynolds, Regional Forester
Intermountain Region - USDA-Forest Service
324-25th Street
Ogden, Utah 84601

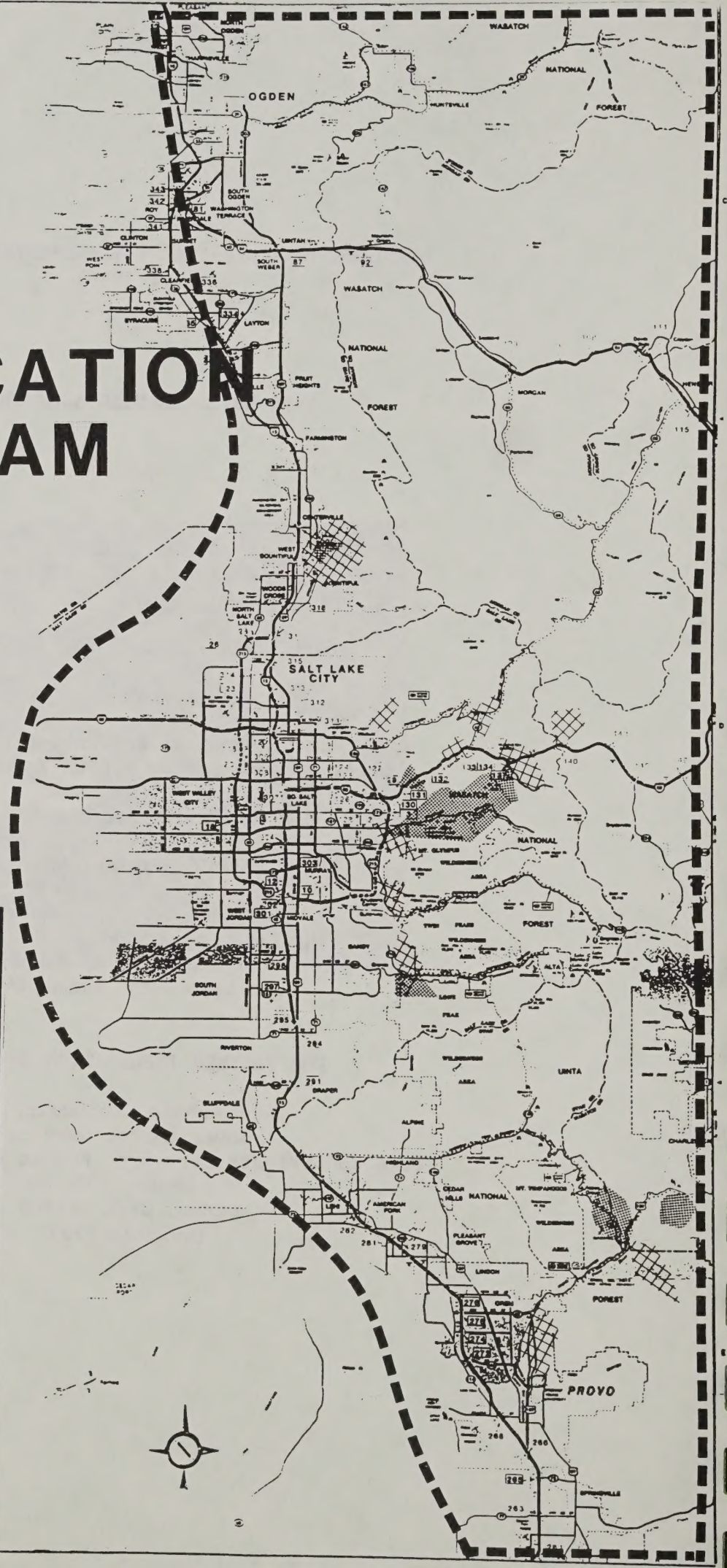
In Cooperation With

Miles "Cap" Ferry, Commissioner
Utah State Department of Agriculture
350 North Redwood Road
Salt Lake City, Utah 84116

FOR FURTHER INFORMATION CONTACT:

John Anhold, Entomologist
USDA, Forest Service
State and Private Forestry, Forest Pest Management
4746 South 1900 East
Ogden, Utah 84403
(801)476-9732

UTAH GYPSY MOTH ERADICATION PROGRAM MAP



LEGEND

BOUNDARY OF POTENTIAL GYPSY MOTH INTRODUCTIONS

PREVIOUS YEARS TREATMENT AREAS

1992 TREATMENT AREAS

FIVE-YEAR SUPPLEMENT
(1992-1996)
to
1990 ENVIRONMENTAL ASSESSMENT
for
GYPSY MOTH ERADICATION

WASATCH FRONT, UTAH

I. INTRODUCTION

The gypsy moth was first discoved in Utah in 1988. This pest, introduced into the United States in the late 1800's, has become firmly established in over 13 states in the East. In that area, it strips the leaves off of over 500 species of forest trees and ornamental plants on between two to 12 million acres per year. It is an immense public nuisance. Local and private applicators treat an average of one million acres per year with various pesticides. The average cost per state is in the vicinity of two to three million dollars.

The first eradication treatment in Utah was done in 1989 after appropriate environmental analysis and preparation of an Environmental Assessment. Only 1,200 acres were treated because there was little information on the distribution of the pest at that time. More intensive surveys following this treatment indicated that a mojor effort would be necessary to eradicate the gypsy moth along the Wasatch Front.

In 1990, another environmental analysis was conducted; three public meetings were held in Bountiful, Salt Lake City, and Provo, and another Environmental Assessment for the eradication of the Gypsy Moth infestation in Utah was prepared and a Decision Notice signed. This assessment described and analyzed four alternatives that were considered possibilities for meeting the target of gypsy moth eradication. Issues and concerns which surfaced through the assessment process were addressed in the Decision Notice. That document is the base document to which subsequent documents are supplemented. The treatment in 1990 covered 20,064 acres of Federal and non-Federal lands.

The selected alternative, identified as Integrated Pest Management, was the combination of area quarantine, inspection of household goods moved from known infested areas, more extensive and intensive trapping surveys, and eradication treatments with Bacillus thuringiensis (B.t.). B.t. is a biological insecticide that affects only moth and butterfly caterpillers, eliminating the concern over effects on bees, aquatic insects, and other beneficial, non-target insects. B.t. occurs naturally in the soil and is considered ubiquitous. Research studies have shown that there are no significant effects on humans or other animals.

In 1990 and 1991 based on this assessment, three aerial applications of B.t. were sprayed on the known infested areas each year, using helicopters. Treatment areas included non-federal and Federal lands, including Bureau of Land Management lands as well as lands on the Uinta and Wasatch-Cache National Forests. All treatment areas were in Davis, Salt Lake, Wasatch, Summit, and Utah Counties in the state of Utah. Acreages treated in 1990 and 1991 were

20,064 and 29,925 acres, respectively. The increase in acreage each year was due to location of additional population centrs - a result of better detection capabilities. It is now felt that the population has been well delimited and that numbers of acres requiring treatment will decrease annually, ending with eradication.

II. PURPOSE AND NEED FOR ACTION

If the gypsy moth were to go unchecked in Utah, because it is an introduced pest and has few natural parasites and predators in this area, the impacts on Utah's Natural resources could be much more significant than in the East. Furthermore, the State's plant products could be placed under quarantine. This loss of revenue and the ultimate cost of annual suppression programs could significantly impact the State's economy.

The aerial spraying programs have been very successful, reducing Gypsy moth populations in treated areas by approximately 92% each year. However, more intensive trapping surveys detected other infestations of the gypsy moth inside and outside the treated areas. These areas are adjacent to or within previously treated areas and contain basically the same vegetation and land types, and have the same issues and concerns as previously assessed in 1990.

A general map showing the areas treated in previous years and the proposed treatments for 1992 is provided in the Decision Notice. That map also delineates the area along the Wasatch Front which is considered the analysis area for this assessment. Larger scale maps are also included for the convenience of the public. In order to eradicate the gypsy moths in the State of Utah, the Integrated Pest Management Approach with aerial treatment using B.t. is recommended.

This Supplement to the 1990 Environmental Assessment will serve as a multi-year document. The types of areas being treated and the issues needing to be addressed are not expected to change within the area shown of the map mentioned above. Therefore, the 1990 Assessment as supplemented here, is expected to be sufficient for any actions taken through the remainder of the eradication effort. Each year, the issues will be reviewed and the public will be involved in determining if any new issues need to be addressed. If so, an analysis will be done and a new Environmental Assessment prepared, if necessary.

III. WHAT IS PROPOSED

The Forest Service in cooperation with the State of Utah Department of Agriculture propose to treat infested federal and non-federal lands in the state of Utah, along the Wasatch Front. Treatment of 15,718 aces is proposed for 1992. The treatment includes 2,029 acres of wilderness. A breakdown of acreages and exact locations for 1992 can be found in the Decision Notice. The proposed treatments will occur between May 15 and June 30 depending on weather conditions. Future treatments are expected to encompass progressively smaller acreages. The exact locations are not known but they would logically be in the vicinity of previous treatment areas and the acreages are expected to be in approximately the same size range as for 1992.

IV. ISSUES AND CONCERNS

During the 1990 Environmental Assessment process, seven issues and concerns were identified and discussed. These were:

Human Health
Effects on Non-target Moths and Butterflies
Alternatives to Eradication
Quarantine
Economic Effects
Threatened and Endangered Plants and Animals
Wilderness

(A complete discussion may be found on pps. I-2 thru 5 in the 1990 E.A. and in the Appendix of the attached Decision Notice for 1992.) Basically, management of Wilderness Areas is guided by the Wilderness Act of 1964. Further guidance for considering treatment of pests in a wilderness is given in the Forest Service Wilderness Management Manual 2320.2. The proposed treatment meets the intent of these guidelines for treatment of insects and diseases in Wilderness Areas. Without treatment of the Wilderness, eradication of this pest in Utah would be impossible because of reinfestation of areas outside the Wilderness from insect populations within the Wilderness. The loss of resources within the Wilderness by this exotic pest is another consideration.

These same issues and concerns pertain to future proposed treatment areas with the associated mitigating measures.

Query of individuals in the treated areas in 1991 and discussions at the 1992 public meeting held in the Olympus Cove Area of Salt Lake City surfaced concern by asthmatics and concern over possible effects on pets. These questions are addressed under the environmental consequences section.

V. ALTERNATIVES

For the 1990 Environmental Assessment, a range of alternatives was considered. These were:

Alternative A - No Action
Alternative B - Chemical Insecticide Treatment alone
Alternative C - Biological Insecticide Treatment alone
Alternative D - Integrated Pest Management

(the complete description may be found on pps. II-1 thru 3 in the 1990 E.A.) With basically the same areas and proposed program involved in subsequent treatments, those same alternatives which were considered but eliminated from further consideration in 1990 and the viable alternatives and rationale for each will still apply. No new alternatives will be considered.

VI. AFFECTED ENVIRONMENT

The areas proposed for treatment each year and covered in this 5-year supplement will be within the boundary of map 1 which is in the Appendix in the Decision Notice. General physical and biological descriptions are the same as in the 1990 Environmental Assessment.

VII. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

A complete discussion of the direct, indirect, and cumulative environmental impacts of each of the alternatives and environmental consequences as each relate to the issues was covered in great depth in the 1990 Environmental Assessment, Chapter IV. Two areas for which additional comments are appropriate are: Effect of Bt on sensitive individuals and potential effect of on pets.

Potential Effects on Sensitive Individuals - Research has been conducted with human volunteers for both ingestion and inhalation effects. The dosages used and the test procedures are discussed on pages 70 and 71 of the Final Environmental Impact Statement as supplemented - 1985 for Gypsy Moth Suppression and Eradication Projects (see appendix of 1992 Decision Notice). Megadoses of Bt were given to the volunteers. They were then evaluated for reactions of the genitourinary, gastrointestinal, cardiorespiratory, and nervous systems. In addition, seven other lab tests were run. All tests were negative.

These tests indicate, that, for the normal population, there are no adverse effects from this product. However, this bacteria, like anything else added to our air, is a foreign material. It is naturally occuring in the soil and water, but, for people who have allergies to minute amounts of dust, chemicals, fungi, etc., this material might possibly serve as an allergen as those other materials do. Mitigative measures to deal with this possibility are discussed in a later section.

Potential Effects on Pets - As in the case of humans, extensive research has been conducted on rabbits, dogs, birds, and fish. Again, megadoses were given to these test animals and no significant reactions were noted. The results are found on the same pages of the Final Environmental Impact Statement written in 1985 and referenced above. As with humans, there may be some pets which are hypersensitive to various substances. If so, the same mitigative measures would apply to them as to humans.

VIII. MANAGEMENT CONCERNS AND MITIGATION

The management concerns identified in 1990 remain the same. These concerns were addressed with proper mitigation. Also, the Wasatch-Cache National Forest Land and Resource Management Plan of 1985 was amended to accommodate aerial spraying in riparian areas.

The mitigation requirements will remain in effect for the proposed treatment programs. These include:

-Locate helispots to reduce contamination in case of loading spills.
-No application if:
    winds exceed 10 mph.
    rains predicted within 2 to 6 hours of spraying.
    temperature inversion exists.
    visibility is poor.
-Do not spray protected areas or areas outside annual spray boundaries set by the Decision and Action Committee.

-Pilots fly each spray block for familiarization prior to spraying.
-Use ground sprayers where unfeasible for aerial application.
-Buffer sensitive areas as needed.
-Provide accurate public information on possible risks.
-Provide information on any personal protective measures.
-Monitor and followup on reported cases of contamination or ill effects.
-Prepare a safety plan and a spill plan.
-School bus routes will not be sprayed if children are present.
-Show sensitivity of noise pollution by helicopters.
-Work with Utah Lepidopterists' Society on exclusion areas or other protective measures for sensitive moths and butterflies.
-Prepare annual biological assessment with U.S. Fish and Wildlife concurrence.
-Work with allergists and other organizations to identify potentially sensitive individuals so they can be notified before application in the event that they want to temporarily remove themselves from the area. A Hotline is available for calls from these individuals and others wanting specific information about the project (801-524-6207).

IX. LIST OF PREPARERS

This Supplement to the 1990 Environmental Assessment for the eradication of Gypsy Moths in Utah was prepared by an Interdisciplinary Team of specialists from a cross section of the jurisdictional agencies involved in the spray proposal. This team consisted of the following:

JIM COOK, TEAM LEADER, WASATCH-CACHE NATIONAL FOREST
WAYNE WHALEY, UTAH LEPIDOPTERISTS' SOCIETY
FRANK NABROTSKY, SALT LAKE CITY-COUNTY HEALTH DEPARTMENT
RUSS HONE, SALT LAKE CITY WATER DEPARTMENT
JOHN ANHOLD, U.S. FOREST SERVICE, FOREST PEST MANAGEMENT
LEON LAMADELEINE, U.S. FOREST SERVICE, FOREST PEST MANAGEMENT
JIM KELLER, PLEASANT GROVE RANGER DISTRICT, UINTA NATIONAL FOREST
RICHARD RUSK, SALT LAKE RANGER DISTRICT, WASATCH-CACHE NATIONAL FOREST
GARY KING, UTAH DEPARTMENT OF AGRICULTURE

DECISION NOTICE

and

FINDING OF NO SIGNIFICANT IMPACT

for

GYPSY MOTH ERADICATION PROGRAM
(1992-1996)

DAVIS, MORGAN, SALT LAKE, UTAH, WASATCH, WEBER, UTAH COUNTIES

WASATCH-CACHE AND UINTA NATIONAL FORESTS

USDA-FOREST SERVICE

PROPOSED ACTION

The Forest Service in cooperation with the State of Utah Department of Agriculture is proposing the continuation of the Gypsy Moth Eradication Program that began in 1989 in Utah. The 1992 proposal is to treat approximately 6,319 acres of non-federal lands and 9,399 acres of National Forest System lands within the Wasatch-Cache and Uinta National Forests. All lands are within Davis, Salt Lake, Utah, and Wasatch Counties. The treatment area includes approximately 2,029 acres of wilderness. Part of this proposed treatment would involve the retreatment of a portion of acres sprayed in 1989, 1990, and 1991.

Treatment in subsequent years covered in this Decision Notice will be based on annual biological evaluations. Acreage needing treatment is expected to decrease annually with the goal of eradication by 1995. The size of any future treatment blocks are expected to be in the size range of prior treatment and the size of the blocks, like the total acreage, is expected to decrease as the project progresses toward completion.

The assessment of alternatives, issues, and concerns is documented in an Environmental Assessment approved in 1990, as supplemented. The rationale and authority for treatment of wildernesses are discussed in those documents. The documents are available for review at all offices involved in this cooperative proposal. The authority and conditions for treating wilderness are included in the appendix of this document.

DECISION

Based upon the analysis documented in the Environmental Assessment and site specific biological evaluations, it is my decision to provide federal financial assistance and technical support to the Utah Department of Agriculture for their Gypsy Moth Eradication Program and to allow treatment on National Forest System lands.

Treatment will be conducted on approximately 15,718 acres, as described above, in 1992, and as deemed appropriate through future biological evaluations in

subsequent years. Alternative D, identified as Integrated Pest Management, is the selected method of treatment. Annually, the targeted acreage will receive three aerial applications, via helicopter, of the biological insecticide Bacillus thuringiensis, B.t. This alternative also includes quarantine, inspection of household articles moved in from the generally infested areas of the nation, intensified detection surveys, and mitigation measures. This alternative was selected because it is the most comprehensive yet uses a quite specific and extremely environmentally safe pesticide.

ALTERNATIVES CONSIDERED

The range of alternatives for the Environmental Assessment that were considered are:

ALTERNATIVE A - No Action
ALTERNATIVE B - Chemical Insecticide Treatment only
ALTERNATIVE C - Biological Insecticide Treatment only
ALTERNATIVE D - Integrated Pest Management

(a complete description of each of these alternatives may be found on Pages II- 1 thru 3 in the 1990 EA.)

PUBLIC INVOLVEMENT

Input from all publics was solicited during the Environmental Assessment process. As part of the Public Information Plan, all local newspapers and television and radios stations were notified for public information disbursal. A public meeting was held in Salt Lake County with representatives of all cooperative agencies participating in the information-type format. Many one-on-one meetings were also held with citizens or groups who indicated that they wanted to be advised of the 1992 project plans. Public participation indicated that the effects on the quality of the human environment and on other non-target species are not likely to be highly controversial due to the care taken to consider these. A copy of the Public Information Plan is in the Appendix.

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the criteria in 40 CFR 1508.27 and have determined that the proposed action is not a major federal action and will not significantly affect the quality of the human environment. Therefore, an environmental impact statement is not needed. This determination is based on the following factors:

1. A National, Programmatic Environmental Impact Statement for Gypsy Moth Suppression and Eradication Projects was written in 1985. The Environmental Assessment prepared for this project is tiered to that document.

2. The biological insecticide B.t., proposed for use in the Utah Eradication project, is registered for the intended purpose by the Environmental Protection Agency (EPA).

3. B.t. applications will comply with EPA label directions and State and Federal law.

4. The selected alternative provides for the use of the biological insecticide B.t. as a means of mitigating impacts on non-target flora and fauna.

5. There are no significant human health risks or uncertainties posed by use of B.t.

6. No rare or endangered species are known to occur in the proposed treatment blocks although the Peregrine Falcon is known to frequent and reproduce in the Salt Lake City area and the June Sucker exists out of the spray blocks but downstream in the Provo River. A determination has been made by the U.S. Fish and Wildlife Service that the use of B.t. will not be harmful to these Threatened and Endangered species. No significant impacts on native flora or fauna are expected from the application of the proposed insecticide. Annually, biological evaluations will be made regarding T&E species and this evaluation will be provided to the U.S. Fish and Wildlife Service for concurrence.

7. No known sensitive or locally rare species of Lepidoptera are known to exist in the proposed treatment areas.

MITIGATING MEASURES

The selected alternative incorporates the mitigating measures discussed in the Final Environmental Impact Statement(pp. 24-30). In addition, the following mitigating measures were incorporated in response to issues and concerns:

-Locate helispots to reduce contamination from loading spills.
-No application if:
    winds exceed 10 mph.
    rains predicted within 2 to 6 hours of spraying.
    temperature inversions exist.
    poor visibility
-Do not spray protected areas or outside spray boundaries.
-Pilots will fly each spray block for familiarization prior to spraying.
-Use ground sprayers where unfeasible for aerial application.
-Use spray cards to monitor application.
-Buffer sensitive areas as needed.
-Provide accurate public information on possible risks if found.
-Provide information on any personal protective measures.
-Monitor and followup on reported cases of contamination.
-Prepare a safety plan and a spill plan.
-School bus routes will not be sprayed if children are present.
-Work with Utah Lepidopterists' Society on exclusion areas or other protective measures for sensitive moths and butterflies.
-Work with allergists to identify potentially sensitive individuals so they can be notified before treatment in case they want to take special precautions.
-Provide a Hotline for response to questions from the public during treatment (801-524-6207).

This decision will be implemented no sooner than 45 days from the date on which it is made public in the Ogden Standard Examiner. Copies of this Decision Notice, EA and FEIS, along with project maps and work and safety plans are available for public review at the following offices:

Utah Commissioner of Agriculture
350 N. Redwood Road
Salt Lake City, Utah 84116

Forest Supervisor
Wasatch-Cache National Forest
8230 Federal Bldg.
125 South State Street
Salt Lake City, Utah 84138

Forest Supervisor
Uinta National Forest
88 West 100 North
Provo, Utah 84601

USDA Forest Service
Forest Pest Management
324 25th Street
Ogden, Utah 84401

This decision is subject to administrative review in accordance with 36 CFR 217. Any appeal of this decision must include the information required by 36 CFR 217.9 (Content of a notice of appeal), including the reasons for appeal. Two (2) copies of the Notice of Appeal must be filed with the Chief of the Forest Service within 45 days of the date of publication of the Legal Notice in the Ogden Standard Examiner.

For further information contact JIM COOK at 8230 Federal Building, 125 South State, Salt Lake City, Utah 84138.

John W. Chambers 3/10/92

for GRAY REYNOLDS
Regional Forester
Intermountain Region
324 25th Street
Ogden, Utah 84401

DATE

CONCURRENCE

Peter Karp

PETER KARP
Forest Supervisor
Uinta National Forest

3/6/92
DATE

Susan Giannettino

SUSAN GIANNETTINO
Forest Supervisor
Wasatch-Cache National Forest

3/6/92
DATE

MILES "CAP" PERRY
Commissioner
Utah State Department of Agriculture

3/6/92
DATE

A P P E N D I X

MAPS OF SPRAY BLOCKS

SPRAY BLOCK ACREAGE CHART

PUBLIC INFORMATION PLAN

NEWSPAPER ARTICLES

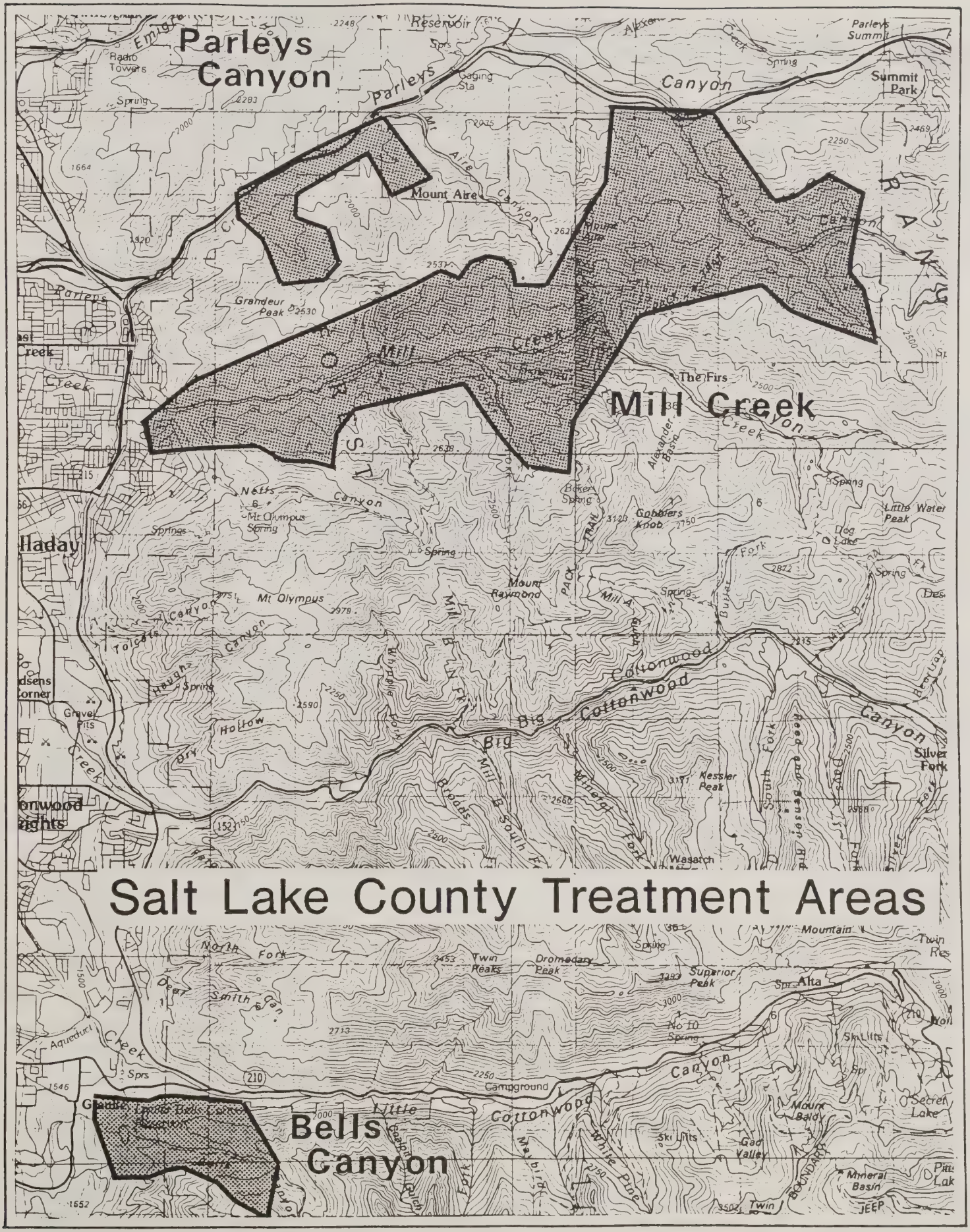
BIOLOGICAL ASSESSMENT

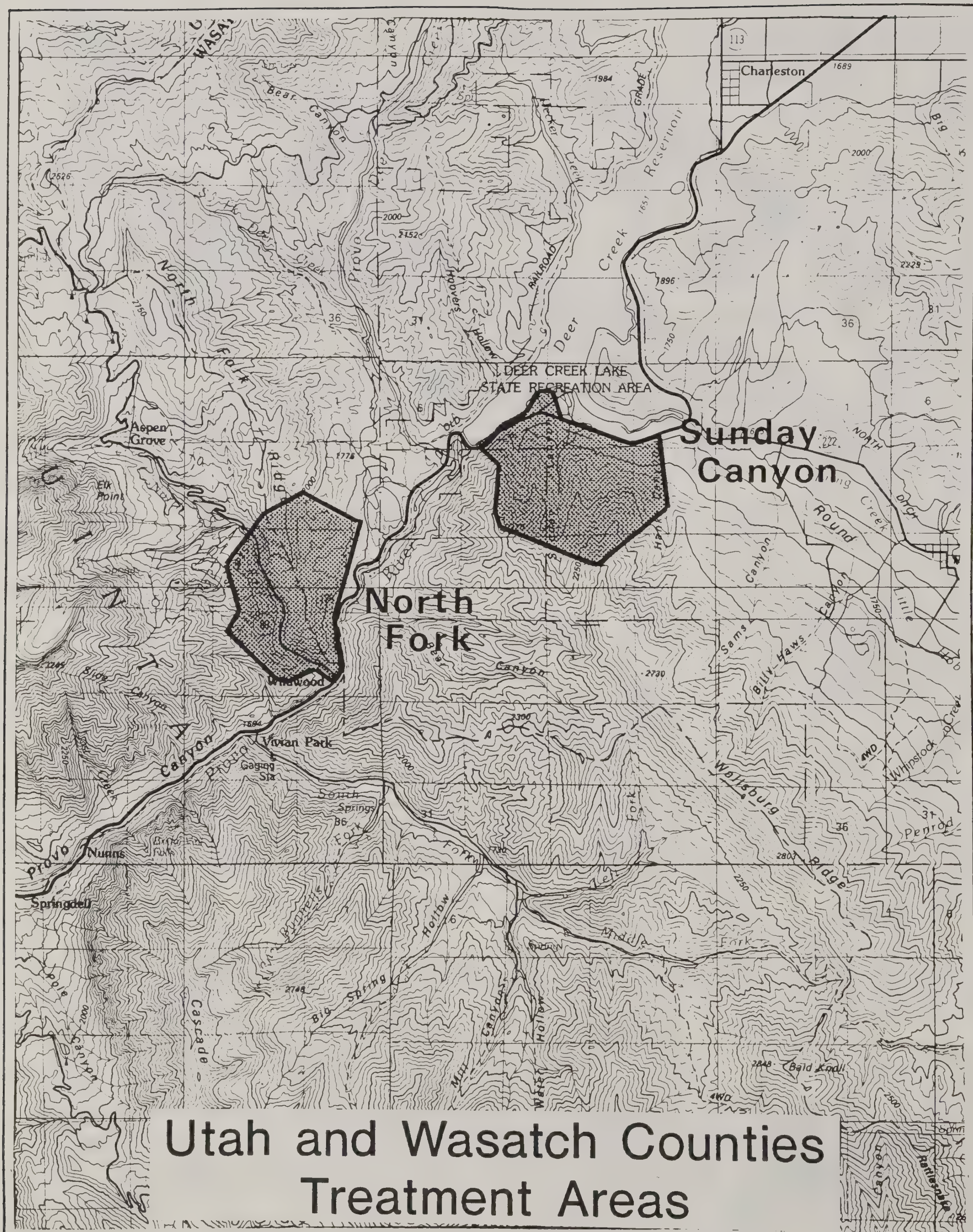
WILDERNESS TREATMENT AUTHORITY AND CONDITIONS

U.S. FISH AND WILDLIFE APPROVAL

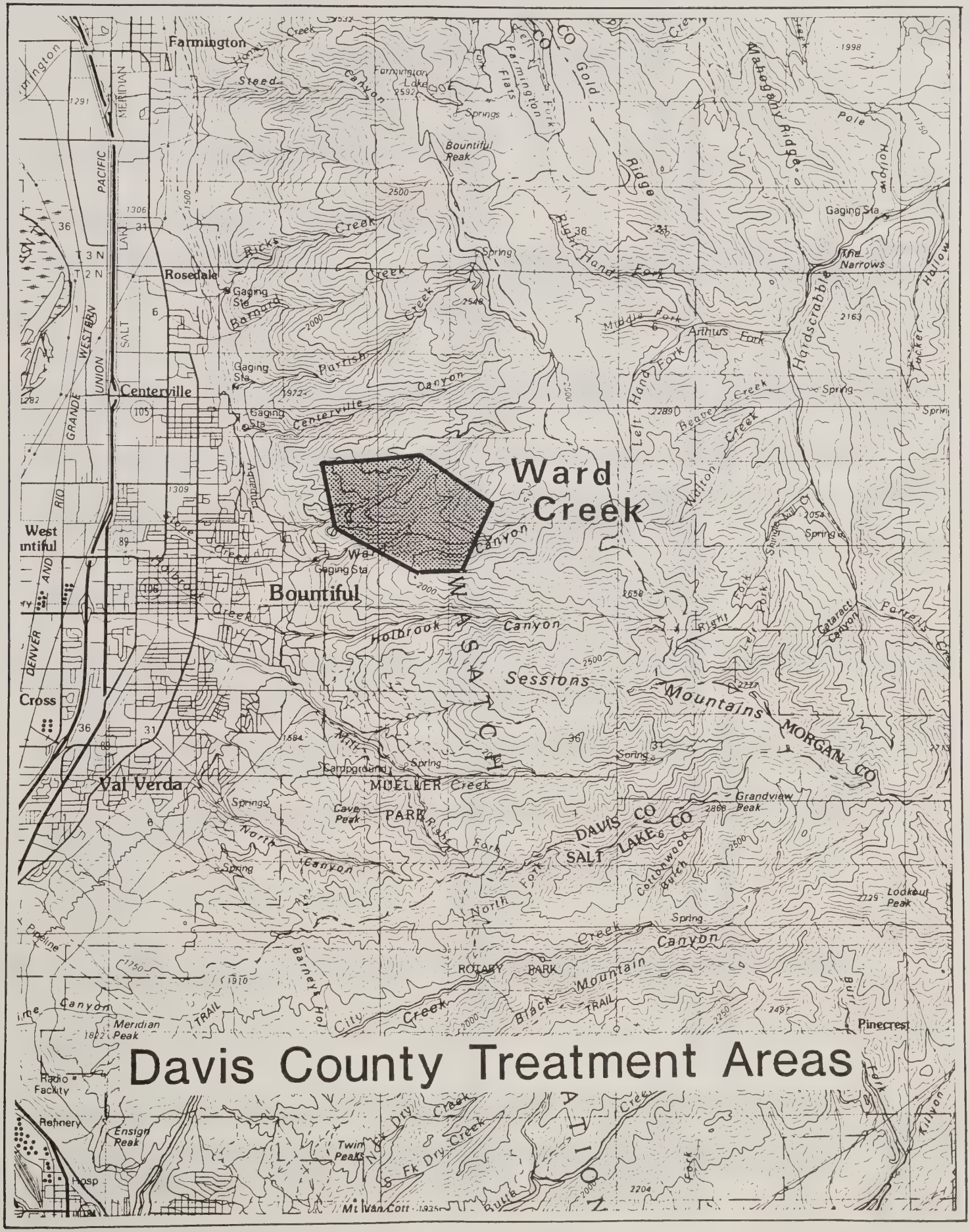
HEALTH RISK APPRAISAL AND LITERATURE REVIEW
UTAH DEPARTMENT OF HEALTH, DIVISION OF ENVIRONMENTAL HEALTH

PESTICIDE USE PROPOSAL


Parleys Canyon
Mill Creek Canyon
Bells Canyon
Salt Lake County Treatment Areas



Utah and Wasatch Counties
Treatment Areas


Ward Creek
Davis County Treatment Areas
Farmington
Centerville
Bountiful
Rosedale
West Bountiful
Val Verda
Cross
Pinecrest
Sessions Mountains
Wasatch
Davis Co
Morgan Co
Salt Lake Co
Gaging Sta
Spring
Canyon
Creek
Trail
Rotary Park
Meridian Peak
Ensign Peak
Twin Peaks
Radio Facility
Refinery
Hosp
Mi Van Cott

	Treatment Summary By 1992 Blocks					Owernership			
Block	1989rt	1990rt	1991rt	1992new	Total	Fed-own	Non-Fed	Wilderness	
Millcreek	247	1,905	2,778	3,916	8,846	7,379	1,467	1,340	Mt. Olympus
Parleys	0	0	0	1,063	1,063	508	555	0	
North Fork	0	0	156	1,351	1,507	202	1,305	0	
Sunday	0	0	0	1,779	1,779	8	1,771	0	
Bells	0	229	79	952	1,260	809	451	689	Lone Peak
Ward	0	374	234	655	1,263	493	770	0	
Totals	247	2,508	3,247	9,716	15,718	9,399	6,319	2,029	

PROPOSED
PUBLIC INVOLVEMENT / INFORMATION
For 1992 Eradication Program

INFORMATION ACTIVITIES DURING THE TREATMENT

Daily updates to Media (TV, Newspaper, and Radio)

Daily updates on phone recording — These updates will include a description of the treatment blocks for that particular day and if known, the description for the next day's operation.

Daily contact with Life Flight and Air Med.

Daily application meeting will include an Information update on concerns that residents/recreationists bring to the attention of the Information Group.

Weekly progress reports to Media, Decision and Action committee, and other interested parties

Contact list of concerned citizens (broken down by treatment blocks) which we will contact before each application

SIGNING

we will order 6 more signs which will have removable wording "GYPSY MOTH AERIAL SPRAYING" and "RESTRICTED - GYPSY MOTH HELIBASE" (helibase signs will be used at the entrance of where the helicopters land to refill and refuel to restrict access during the application.

large 4'x4' signs "GYPSY MOTH AERIAL SPRAYING" will be placed at critical locations along the major routes where aerial spraying took place

Smaller 8 1/2"x11" florescent signs will be placed at information boards in developed recreation areas and trailheads.

SCHOOLS

Personal visits will be made to most schools where children within the treatment blocks attend.

LIBRARIES

Flyers announcing this Public Meeting were posted at three of the Salt Lake County Libraries.

Personal visits will be made to the Public Libraries close to the Treatment Blocks and a tabletop display and handouts will be provided on the Gypsy Moth Project, including the quarantine information.

NEWS RELEASES

News Releases will sent to the Media (TV, Newspaper, and Radio) before the public meeting, after the Environmental Assessment Supplement has been approved, and before the beginning of the Treatment Project.

PERSONAL CONTACTS / VISITS

In February and March, members of the Information Group will hand delivered thank you letters and/or invitations to the public meeting to residents with special concerns during the 1991 treatment program.

Members of the Information Group will be placed at critical areas within the treatment blocks to provide information to concerned citizens and recreationists.

Other personal visits will be made as deemed necessary during the treatment project.

Door to door contacts will be made in a few of the new treatment areas this year (probably in May) prior to the start of treatment.

MEETINGS AND DISPLAYS

This Public Meeting in Salt Lake County is the only one scheduled at this time.

Meet set Tuesday on moth eradication project

A public meeting on the 1992 Gypsy Moth Eradication Program will be held at 7 p.m. Tuesday, Feb. 11, at Churchill Junior High School, 3450 E. Oakview Drive.

Information on this year's eradication program will be released as well as data on the outcome of the 1991 treatment project. The environmental assessment for the 1992 project also will be discussed.

The meeting will be conducted by representatives of the U.S. Forest Service and the Utah Department of Agriculture.

The 1992 project will cover nearly 16,000 acres in Salt Lake, Davis, Utah and Wasatch counties.

The gypsy moth's favorite food is oak leaves, which open about the same time the moth larvae emerge from egg masses. However, larvae have voracious appetites and may eat as many as 500 species of plants.

The eradication program includes aerial spraying of a bacillus thuringiensis, a bacterium that attacks the insect's digestive system. The bacterium occurs naturally in the soil and poses no threat to other animals.

BIOLOGICAL ASSESSMENT
for THE
GYPSY MOTH ERADICATION TREATMENT

Richard Williams, Wildlife Biologist
1992 Program

Introduction

This assessment is generated by the proposal to treat areas in Davis, Salt Lake, Wasatch, and Utah counties along the "east bench" at the foot of the Wasatch Mountains for the eradication of the gypsy moth. Classified species which will be evaluated here include the endangered peregrine falcon and the endangered June sucker. Also, although there are no moth and butterflies listed as threatened or endangered in the areas to be treated, we will discuss the status of some sensitive and locally rare species because of the public interest in this issue.

Proposed Action

The treatment is proposed for 9,558 federal acres and 6,595 non-federal acres. The treatment would be an application of the commercial formulation Foray 48b or a similar product which would consist of Bacillus thuringiensis kurstaki (Bt) in an aqueous solution with non-organic solvents as the surfactant. Treatment will involve three separate aerial applications.

Peregrine Falcon

A pair of peregrines nests in the area of Ensign Peak, north of Salt Lake City and a non-producing pair has been observed in the Slate Creek area in Utah County. Both of these areas are outside the proposed treatment blocks.

No direct impacts on peregrines are known for Bt. The bacteria is a naturally occurring organism that is highly specific against lepidopterous larvae. Indirect effects may include the reduction in the peregrines prey base (which is almost exclusively bird species) due to a temporary reduction in lepidoptera species. However, treatment blocks are being kept as small as possible to allow reinfestation from surrounding, non-treated areas. The Hotel Utah pair may feed in the Davis and Salt Lake County foothill and canyon treatment areas, although preferred feeding areas include croplands, marshes, and river bottoms. The Utah County pair occurs within the treatment area. Again, the potential impact is largely one of a possible reduction in the prey base. This reduction would be short-term and would likely be buffered by the peregrines use of other prey species which do not feed on lepidoptera.

June Sucker

The June sucker is found in the lower reaches of the Provo River adjacent to Utah Lake. The species found well below the National Forest Boundary and outside of the treatment area. The sucker feeds along the stream bottom on

various macro-invertebrates and other organisms, and spawns in finer gravels in the Provo River during the spring.

No direct or indirect impacts are anticipated to occur on this species since the treatment area is more than five miles upstream from June sucker habitat. The Bt formulation has no apparent effect on macro-invertebrate populations (Fred Mangum, personal communication). Also, the Bt formulation will be applied parallel to the stream course to minimize the amount of formulation which enters the stream. Due to the nature of the formulation, it is not persistent in aquatic systems.

Non-Target Lepidoptera

Surveys were conducted for diurnal Lepidoptera in 1989, 1990, and 1991. Moths were also monitored in 1991. There was initially concern over 17 species, but, after investigation, only ten species were of concern and only three species were found within the areas to be treated in 1990. Measures were taken to reduce the impact on these species during the project through the use of exclusion areas.

Surveys in 1991 indicated good populations of Incesalia fotis, the species targeted for protection, in these exclusion areas. In 1991, only 2 sensitive species were found within the proposed spray blocks. They were the Ridings Satyr (Neominis ridingsii) and the White-lined Green Hairstreak (Callophrys sheridani). These species occupy habitats different from that occupied by the gypsy moth. Exclusion areas were established to protect the N. ridigsii. One area with C. sheridani could not be avoided but a colony of that species is located outside the spray block and reintroduction may be possible after the treatments are complete. This species is not genetically diverse so reintroduction is possible without affecting genetic distribution of the species.

In 1992, there is only one area, east of Provo, where I. fotis is a concern. In that area, only 5 moths have been caught. Treatment will be postponed and mass trapping will be done to verify or negate the need for treatment in 1993. The project is being closely coordinated with the Lepidopteran Society to ensure that no adverse, irreversible impacts occur with these sensitive species.

Conclusions

Based on the above assessment it is anticipated that neither classified species will experience any population change as a result of the proposed treatment. No direct impacts will be experienced by any species. Any indirect impacts on the peregrine would be insignificant and short-term (possible reduction in food sources for lepidoptera-dependent prey species). Non adverse, irreversible impacts are expected for the non-target Lepidoptera.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE ENHANCEMENT
UTAH STATE OFFICE
2078 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

TAKE PRIDE IN AMERICA

In Reply Refer To

(FWE)

January 9, 1992

Susan Giannettino
Acting Forest Supervisor
Wasatch-Cache National Forest
8236 Federal Building
125 South State Street
Salt Lake City, Utah 84138

Dear Ms. Giannettino:

This is in response to your letter of December 9, 1991 concerning the proposed Gypsy Moth Eradication Spray Program for 1992, in Davis, Salt Lake, Wasatch, and Utah counties, Utah. The spray treatment would be an application of the commercial formulation Foray 48b which consists of Bacillus thuringiensis kurstaki (Bt) in an aqueous solution with non-organic solvents as the surfactant. The treatment would cover 9,558 acres of Federal land and 6,595 acres of non-Federal land and would involve three separate aerial applications. The endangered peregrine falcon (Falco peregrinus) and the June sucker (Chasmistes liorus) are in the area of this project.

This office has reviewed the biological assessment that was enclosed with your letter and concurs with your conclusion that the proposed project would not affect either endangered species. Bt is a naturally occurring bacteria that is specific to lepidopteran insects and does not affect other species. Some reduction in birds that prey on lepidopteran species may occur but this would not effect the falcon as it can prey on a wide range of bird species and the lowering in numbers of one prey would be made up by the taking of other more common bird species. The treatment area to the east of Utah Lake would occur 5 miles above June sucker habitat in the Provo River. Bt does not affect macro-invertebrate populations in streams and is not persistent in aquatic systems. The Bt formulation would be applied parallel to the stream course to minimize the amount of formulation which enters the stream.

We appreciate the cooperation of the Forest Service in this project and if we can be of further assistance please let us know.

Sincerely,

Clark D. Johnson
Assistant Field Supervisor

cc: Utah Division of Wildlife Resources/Salt Lake City

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

State of Utah
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Bureau of Environmental Response and Remediation
288 North 1460 West, P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6338

BACILLUS THURINGIENSIS LITERATURE REVIEW AND HEALTH RISK APPRAISAL

Gerrie Thompson
Community Health Specialist
Bureau of Epidemiology
February 8, 1991

A review of medical literature from 1980-1990 was done to assess the risk of exposure among humans to Bacillus thuringiensis (B.t.).

Most of the studies done to date have been animal experiments, usually without controls, showing B.t. to have no adverse effects. In one human study 18 subjects ingested B.t. capsules for five days and five subjects also inhaled the powder for five days without adverse health effects.[1]

Bacillus thuringiensis preparations have shown the crystal toxin to have a high selectivity restricted to a special group of insects.[2] The crystal toxin is activated under alkaline conditions that are found in the gut of the gypsy moth larva. Should B.t. be ingested by humans or other animals, the B.t. is unable to germinate within the digestive tract. The viable spores will be excreted in the feces and the crystals are inactivated in the gut.[2]

There are two case reports of infections in which B.t. was cultured from the sites of exposure. One was an accidental needle stick in a laboratory by a research student who harvested spores and endotoxin of B.t. The other case involved a farmer who was using B.t. as a pesticide and splashed the solution in his eye. Both cases were treated with antibiotics and resolved without incident.[3,4,5]

A study was done in Oregon during 1985 and 1986 in which B.t. was sprayed from helicopters over populated areas. The total population exposed over the two year period was approximately 120,000 persons. A non-sprayed community was used as a control.[1]

Over the two year period, a total of 95 cultures were received, 55 which were positive for B.t. Specimens were taken from 18 different body sites or fluids. There were no patterns or consistency in the complaints or symptoms of the community exposed. Fifty-two of the 55 B.t. specimens were

assessed to be contaminants, either of the skin, tissue or the laboratory plates. Of the remaining three patients, B.t.could not be ruled out as a pathogen nor could it be identified as the cause of infection.

The first case involved an elderly immunocompromised person with underlying lung disease. Three of his four blood cultures were negative for B.t. He failed to respond to antibiotics which B.t. is susceptible to which suggests that his pulmonary condition may have been caused by a different organism.

In the second case, B.t. was grown from one of eight gall bladder fluid cultures. The patient had a cholecystectomy for acute gangrenous cholecystites with cholelithiasis (gall stones). The patients' lack of fever and negative exam of gall bladder for bacteria argue against B.t. as the cause of infection. Other evidence against B.t. infection in this case is that only one of eight cultures tested positive five days after collection.

The third case involved an IV drug user in whom B.t. was grown from several cultures of an abscess at an injection site.

In all three cases, B.t. could have caused infection but it also could have been a contaminant of the skin, wound or specimen, due to the lack of a consistent pattern of disease associated with its presence. It is important to keep in mind that B.t. may act as an opportunist and exacerbate existing diseases.[1] This issue is of theoretical concern to immunocompromised persons, especially those with pulmonary complications and possible HIV infection.

Anecdotal complaints among residents of areas sprayed with B.t. have included skin rashes, eye irritation and mild respiratory symptoms. There are two reports, one in 1982 and the other in 1984 in which these symptoms were reported in areas infested with gypsy moth caterpillars.[6,7] These symptoms appear more consistent with allergic reactions to the insect than with exposure to B.t.

Conclusion

Based on this information, B.t. appears to be a relatively safe and effective form of pest control. However, persons who may be at risk for conditions stated earlier should take precautions to avoid exposures to B.t. in areas where it may be used.

References

1. Green M, Heuman M, Sokolow R, Foster LR, Bryant R, Skeels M. Public health implications of the microbial pesticide Bacillus thuringiensis; an epidemiological study, Oregon, 1985-86. Am J Public Health 1990;80(7):848-52.

2. Krieg A, Miltenburger H. Bioinsecticides: I. Bacillus thuringiensis. Adv Biotechnol Processes 1984;3:273-290.

3. Warren RE, Rubenstein D, Ellar DJ, Kramer JM, Gilbert RJ. Bacillus thuringiensis var israelensis: protoxin activation and safety. Lancet 1984, 1:678-9.

4. Samples JR, Buettner H. Ocular infection caused by a biological insecticide. J Infect Dis 1983 Sept; 148(3):614.

5. Samples JR, Buettner H. Corneal ulcer caused by a biological insecticide (Bacillus thuringiensis). Am J Ophthamology 1983 Feb; 95(2):258-60.

6. Shama SK, Etkind PH, Odell TM, Canada AT, Finn AM, Soter NA. Gypsy-moth-caterpillar dermatitis. N Eng J of Med 1982; 306:1300-1302.

7. Tuthill RW, Canada AT, Wilcock K, Etkind PH, O'Dell TM, Shama SK. An epidemiologic study of gypsy moth rash. Am J Public Health 1984;74:799-803.

D-T

2324 - MANAGEMENT OF SUPPORT ACTIVITIES IN WILDERNESS

2324.04 - Responsibilities

2324.04a - Chief. The Chief is responsible for approving:

1. Insect and disease projects that do not meet conditions described in FSM 2324.04b.

2. Replacement of Forest Service facilities at administrative sites and construction of buildings for cooperating agencies that have responsibilities within National Forest wilderness.

3. Extending or widening of existing airfields and construction of new airfields.

4. Construction and maintenance of heliports away from existing administrative sites.

5. Wilderness sign standards.

2324.04b - Regional Forester. The Regional Forester is responsible for:

1. Approving insect and disease control projects within wilderness when the following conditions exist:

   a. There is an immediate threat of unacceptable damage to resources outside the wilderness boundary or of unnatural loss of the wilderness resource due to exotic pests.

   b. The threat cannot reasonably be abated by control actions taken outside the wilderness boundary.

2. Approving the use of prescribed fire on a wilderness by wilderness basis through approval of the appropriate management plan. The management plan sets forth the standards and guidelines for the use and application of prescribed fire and the methods of monitoring results.

3. Approving construction of new fire lookouts.

4. Determining if it is in the public interest to continue use of installations or structures that existed under valid special-use permits or easements when the wilderness was designated.

5. Approving special-use permits for access to valid occupancies and private lands when such use involves construction, reconstruction, or restoration of roads, or other substantial surface disturbance.

6. Approving construction of nonemergency helispots.

2324.04c - Forest Supervisor. The Forest Supervisor is responsible for approving:

1. Reconstruction of existing fire lookouts.

2. Construction of helispots for wildfire suppression and emergencies.

3. Requests to conduct research.

4. Special-use permits for access to valid occupancies and private lands, except those involving construction, reconstruction, or restoration of roads or where other substantial surface disturbance is essential.

2324.1 - Management of Insects and Diseases

2324.11 - Objectives

1. To allow indigenous insect and plant diseases to play, as nearly as possible, their natural ecological role within wilderness.

2. To protect the scientific value of observing the effect of insects and diseases on ecosystems and identifying genetically resistant plant species.

3. To control insect and plant disease epidemics that threaten adjacent lands or resources.

2324.12 - Policy

1. Do not control insect or plant disease outbreaks unless it is necessary to prevent unacceptable damage to resources on adjacent lands or an unnatural loss to the wilderness resource due to exotic pests.

2. Trees within the wilderness have no commercial value. Do not consider the commercial value of trees in wilderness in evaluations for insect and disease control.

2324.13 - Detection. Conduct surveys to monitor forest insects or diseases in wilderness in a manner that preserves the wilderness character of the area. Generally this will be in the same manner as that prescribed for other National Forest System lands (FSM 3412). Modify any procedures that are in conflict with wilderness management objectives.

2324.14 - Evaluation of Epidemics. Perform a biological evaluation of insect or disease outbreaks that have been detected as prescribed in FSM 3421. Do not allow cost-benefit evaluation (FSM 3422) to influence decisions on treatment of insect disease outbreaks in wilderness to the same degree this evaluation affects decisions on other National Forest System land. Weigh the effects of insect or disease epidemics on the wilderness or on resource values outside the wilderness against the adverse effects of a control project in the wilderness.

2324.15 - Control Measures. When control of insects or disease is necessary in National Forest wilderness, it shall be carried out by measures that have the least adverse impact on the wilderness resource and are compatible with wilderness management objectives.

Meet the requirements in FSM 2324.04, FSM 2151, FSM 3430, and FSM 1950 in carrying out insect and disease control projects in wilderness. Special care must be taken with the use of chemicals inside wilderness because of possible effects on the total biological complex. Consider other alternatives to chemical use in the environmental analysis.

2324.2 - Management of Fire

2324.21 - Objectives. The objectives of fire management in wilderness are to:

1. Permit lightning caused fires to play, as nearly as possible, their natural ecological role within wilderness.

2. Reduce, to an acceptable level, the risks and consequences of wildfire within wilderness or escaping from wilderness.

2324.22 - Policy

1. Two types of prescribed fires may be approved for use within wilderness: those ignited by lightning and allowed to burn under prescribed conditions and those ignited by qualified Forest Service officers.

2. No fire may be ignited or allowed to burn without documented, preplanned, specified conditions.

3. Document specific objectives, standards, and guidelines for the control of wildfire and the use of prescribed fire within each wilderness (FSM 5100, 5150, and 5190) in a forest plan or, where the forest planning process has not been completed, in either an interim wilderness management or fire management area plan. Document specific direction for fire program implementation in the forest fire management action plan (FSH 5109.19).

4. Suppress all wildfires within wilderness in accordance with the direction FSM 5130.

5. Fire ignited by lightning may be permitted to burn if prescribed in an approved plan (FSM 2324 and 5150).

6. Forest Service managers may ignite a prescribed fire in wilderness to reduce unnatural buildups of fuels only if necessary to meet at least one of the wilderness fire management objectives set forth in FSM 2324.21 and if all of the following conditions are met:

   a. The use of prescribed fire or other fuel treatment measures outside of wilderness is not sufficient to achieve fire management objectives within wilderness.

U.S. DEPARTMENT OF AGRICULTURE-FOREST SERVICE

PESTICIDE-USE PROPOSAL

(Reference FSM 2150)

DEPARTMENT/AGENCY	PERSON TO CONTACT/TELEPHONE NO.	
USDA-FS	JIM COOK (801)524-3534	
REGION 04	**FOREST** Wasatch-Cache and Uinta	**DATE SUBMITTED** 1-27-92

OBJECTIVE	(1) a) PROJECT NO.	
	b) SPECIFIC TARGET PEST	Gypsy Noth
	c) PURPOSE	Eradication
PESTICIDE	(2) a) COMMON NAME	B.t.
	b) FORMULATION	Water Base
	c) % AI, AE, OR LB/GAL	15%
	d) REGISTRATION NO.	
	(3) a) FORM APPLIED	Flowable
	b) USE STRENGTH (%) OR DILUTION RATE	
	c) DILUENT	
	(4) LBS AI PER ACRE OR OTHER RATE	24 BIU/Acre (½ gal)
APPLI-CATION	(5) a) METHOD	Helicopter
	b) EQUIPMENT	Becomist Nozzle
	(6) a) ACRES OR OTHER UNIT TO BE TREATED	15,718
	b) NUMBER OF APPLICATIONS	3
	c) NUMBER OF SITES	6
	d) SPECIFIC DESCRIPTION OF SITES	See maps in Appendix of Decision Notice
	(7) a) MONTH(S) OF YEAR	May and June 1992
	b) STATES	Utah
SENSITIVE AREAS	(8) a) AREAS TO BE AVOIDED	School bus routes w/children and waterways
	b) AREAS TO BE TREATED WITH CAUTION	None specified
REMARKS	(9) a) PRECAUTIONS TO BE TAKEN	See Mitigation Measures in Decision Notice
	b) USE OF TRAINED/ CERTIFIED PERSONNEL	Helicopter Specialist and Certified Pesticide Use Applicator
	c) STATE AND LOCAL COORDINATION	Ut. Dept of Ag., Sheriff's Dept. of Utah, Wasatch, Davis, and Salt Lake Counties.
	d) OTHER PESTICIDES BEING APPLIED TO SAME SITE	None
	e) MONITORING	Water Sampling
	f) OTHER	
APPROVAL	(10) a) SIGNATURE OF APPROVING OFFICIAL	John W. Lambers — DATE 3/10/92

Previous editions of this form are obsolete. (OVER) FS-2100-2 (7/79)

Instructions for completing Form FS-2100-2, Pesticide-Use Proposal

Heading - Provide requested information.

OBJECTIVE (Block 1)

a. **Project Number.** Assign in accordance with field IPMWG procedures.
b. **Specific Target Pest.** Identify the target pest by common and scientific name. Identify life cycle stage for animals or stage of growth for plants (e.g., emergent or pre-emergent, seedling, sapling, etc.)
c. **Purpose.** State exact purpose of pesticide use.

PESTICIDE (Block 2)

a. Common name of active ingredient(s) as indicated on the pesticide label. When a combination of pesticides are to be used on a single pest, use the word "AND" in listing the pesticide names. When alternate materials are proposed, use the word "OR" in listing the names.
b. Indicate product formulation (i.e., amine, ester, emulsifiable concentrate, granules, solution, etc.).
c. Percentage active ingredient, acid equivalent, or pounds per gallon (as indicated on the pesticide label).
d. List the EPA registration number from the pesticide label.

PESTICIDE - continued - (Block 3)

a. **Form Applied** - e.g., dust, granule, emulsion, bait, solution, gas, etc.
b. **Use-strength or Dilution Rate** - List the quantity of concentrate mixed with the quantity of diluent or indicate the percentage strength of the formulation.
c. **Diluent.** Identify the pesticide carrier, i.e., water, oil, talc, kerosene, etc.

PESTICIDE - continued - (Block 4)

Pounds of Active Ingredient Per Acre or Other Rate. State pounds of active ingredient per acre to be applied, unless some other unit is indicated. If reporting in acreage is not appropriate, indicate units used. Indoor applications of residual sprays may be expressed as percent of actual ingredient in the prepared spray in gallons per M(1,000) square feet. Point of runoff, which may appear on a label is generaly considered to be 1 gallon per 1,000 square feet on most indoor surfaces. If dusts are used instead of sprays, express as ounces or pounds of prepared dust per M(1,000) square feet. Treatment of trees is listed by number of trees or if application is by hydraulic sprayer, is expressed as pounds or quarts of concentrate per 100 gallons of diluent—oil or water, whichever is used. If the pesticide for trees or brush is applied by hydraulic sprayer, it is expressed as pounds or quarts of concentrate per 100 gallons of diluent—oil or water, whichever is used. If the pesticide for trees or brush is applied by air or mist blower, express as pounds of active ingredient per acre. Fumigants or inside aerosols are expressed as pounds of the fumigant or aerosol per M(1,000) cubic feet. Rodent baits should be listed as ounces or pounds of the prepared bait per bait station. Treatments in water may be expressed in parts per million (ppm) by weight or volume—specify. In spot applications, the rate of application is expressed in pounds or gallons per 1,000 square feet indoors or pounds per acre of active ingredient outdoors applied to the spot area treated.

APPLICATION (Block 5)

Indicate as specifically as possible the method (i.e., aerial, ground, etc.) of application and the type of equipment such as helicopter, hand compression sprayer, mist-dust blower, hydraulic sprayer, injector, etc.

APPLICATION (Block 6)

a. **Acres or Other Unit To Be Treated.** State in terms of acres, unless otherwise indicated. Some projects may require repeat applications. Report only the units to be treated for the first application.
b. **Number of Applications.** For projects that require repeat applications to the same area, indicate their estimated number and their timing.
c. **Number of Sites.** If the reported figures are a consolidation from several locations, indicate the number of locations.
d. **Specific Descriptions of Sites.** Indicate the type of area and pertinent portion of the area to be treated; such as ditchbank, rangeland, powerline right-of-way, tree nursery, etc. Specify if pesticide is to be applied in or around water and whether it will be applied directly to water or to the shore. Where applicable, indicate the slope of the treated area. For aquatic use, indicate water quality (hardness and pH) if available or applicable.

APPLICATION (Block 7)

a. **Month(s) of Year.** State month(s) of year.
b. **State(s).** Indicate State and other designation that identifies the area geographically.

SENSITIVE AREAS (Block 8)

a. **Areas To Be Avoided.** Identify sensitive areas to be avoided. Indicate if the area is subject to inadvertent treatment as a result of drift. Describe fully in "remarks" (Block 9) what protective measures are to be taken.
b. **Areas To Be Treated with Caution.** Identify sensitive areas to be treated with special precautions to avoid contamination.

REMARKS (Block 9)

Use this line for information which will be helpful to the field IPMWG in evaluating the project.

a. **Precautions To Be Taken.** Describe specific precautions being taken to protect sensitive areas; for example, no application within 100 feet of streams.
b. **Use of Trained/Certified Personnel.** Provide information on the status of training and/or certification of personnel doing the actual work and of those supervising. Has project been reviewed by a field biologist, agronomist, entomologist, or other appropriate subject matter specialist?
c. **State and Local Coordination.** Indicate coordination on the project at a State or local level.
d. **Other Pesticides Being Applied to Same Site.** Indicate what other pesticides are being or will be applied on the same site within the year.
e. **Monitoring.** Describe any monitoring of the operation to be conducted. Indicate effectiveness of prior projects and mention undesirable side effects observed.
f. **Other.** Indicate if the project is to be accomplished by contract.

Environmental analyses (EA's and/or EIS's) may be referred for additional information.

APPROVAL (Block 10)

a. **Signature of Approving Official**
b. **Date of Signature**